

# Quality Controlled LCD Improvements/Differences/Updates

## Definitions for the Quality Controlled LCD product:

**Version 2 data:** These are data which have been processed through an extensive automated quality control system. **All** data used in the Quality Controlled LCD system will be to at least a Version 2 level. (Version 1 would be un-QC'ed data.)

**Version 3 data:** This constitutes the “official” historical LCD sites from the National Weather Service, for approximately 480 ‘first order’ stations in the U.S. These data undergo interactive/manual QC in addition to the automated QC (Version 2). Version 3 data for these stations will be available some time after the end of the data month, as the final database is built. Version 3 applies to Jan 2006 forward.

**Distinction:** The Quality Controlled LCD form will indicate whether the data shown on the form are Version 2 or Version 3 data. For the ~ 480 ‘first order’ stations, Version 3 will constitute the final product for the month. For the remainder of the stations, Version 2 will constitute the final product for the month. Note: However, Version 2 data may occasionally undergo additional improvements after they are first posted, due to additional QC applied, merging of additional data, etc.

## The greatest improvements for this system are:

- 1) Data are quality-controlled through an extensive automated QC system prior to being placed online. (The unedited LCD data received little or no QC prior to being placed online.) For the approximately 480 ‘first-order’ stations, data will be further QC'ed at the end of the month, to then replace the preliminary data for those stations. This will then constitute the Final LCD dataset/product for that month.
- 2) The user will always receive the latest/greatest version of the data available from NCDC. As data are further QC'ed, they will be loaded into the online database, and available on the Quality Controlled LCD form. Therefore, the data will “match” the final NCDC archived database.
- 3) More stations will appear in the Quality Controlled LCD system, such as the addition of military sites *and Climate Reference Network (CRN) stations*.
- 4) The addition of flags for suspect data:  
If data are suspect (flags 2, 6): s will be appended to the value on the web form;  
s will be placed in a column following the suspect value in the ASCII form.  
If data are erroneous (flags 3, 7): value will not be printed.
- 5) ‘Special’ hourly observations now contain temperature values.
- 6) Some differences in elevation, latitude, and longitude, as metadata changes occur.
- 7) The addition of Surface Weather Observation (SWO) elements. See lists below for specific additions.
- 8) The ability to choose data for one day only via the online interface.

## **Daily Summary:**

- Sunrise and Sunset data have been added. These values are calculated, not observed.
- Significant Weather codes may be different (usually more values in Quality Controlled LCD system).
- Wind Direction is now in whole degrees.

## Hourly Obs:

Some differences might be seen in elevation, latitude, and longitude.

Instead of A02 or A02A, station type is now:

0 AMOS now AWOS

1 NWS

4 MAPSO

5 Navy METAR

6 Navy Airways(obsolete)

8 SOD- Keyed from 10C

9 SOD/HPD- Keyed B16, F-6, Navy Forms

11 ASOS (NWS)

12 ASOS (FAA)

15 CRN

Maintenance Indicator removed – no data existed for this field. Old description:

ASOS Maintenance Indicator

(Indicates ASOS equipment is experiencing maintenance as a result of internal quality assurance checks. One or more elements may be missing or replaced by manual intervention.)

Visibility no longer contains the notation “SM” (statute miles) in the data field.

Temperatures are reported in Celsius, then converted to Fahrenheit, so values are rounded to the nearest whole degrees F.

Wind Speed will now be in miles per hour for all wind data fields.

Old ULCD has:

Wind char field -- G for Gust.

New field name = Wind Gusts -- will contain the gust speed in miles per hour.

Net 3-hour pressure change has been added.

Sea Level Pressure is now provided as inches and hundredths, instead of millibars, to be consistent for all pressure fields.

Hourly precipitation data are often available for ASOS stations. Additionally, hourly precip values now represent the final, corrected data as provided at the end of each day by National Weather Service sites.

Altimeter has been added.